REMARKS

Applicant thanks the Examiner for his careful consideration of the subject application in which claims 2-27 and 30-32 are pending. Claims 2-11 and 30-32 have been allowed and claims 14, 15, 18-20, 25 and 27 have been indicated as containing allowable subject matter. Claims 12, 13, 16, 17, 21-24 and 26 stand rejected, of which claims 12 and 13 have been cancelled by this amendment.

Favorable reconsideration of the subject application is respectfully requested in view of the following comments.

I. Interview Summary

Applicant's representative thanks the Examiner for the courtesy extending during a recent telephone interview on January 27, 2006. During the interview claims 12, 16, 17 and 21 through 22 were discussed relative to U.S. Patent No. 4,170,715 to Mizokawa. While no specific agreement was reached regarding the allowability of such claims, the Examiner expressed an understanding and willingness to reconsider claims 16 and 21 and the deficiencies of Mizokawa relative to these claims. Applicant's representative and the Examiner agreed to disagree that on the sufficiency of the rejection of these claims 17 and 22 in view of the Mizokawa reference; although, an additional distinction between claim 17 and Mizokawa is discussed below. The following response is written based upon the discussions with the Examiner during the above-mentioned telephone interview.

II. Claims 16, 17, 21 and 22 are Patentable over U.S. Patent No. 4,170,715 to Mizokawa.

Claims 16, 17, 21-24 and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,170,715 to Mizokawa ("Mizokawa"). Applicant traverses the rejection of these claims for the following reasons.

Regarding claim 16, Mizokawa fails to teach or suggest a waveform a controller as recited in claim 16. In pertinent part, the waveform controller of claim 16 has a waveform characteristic during a second operating mode to control the driver to temporarily transition the output signal from one of the normally high and low levels to an intermediate level that is between the normally high and low levels and then transition the output signals from the intermediate level to the other of the normally high and low levels. In contrast, the office action relies on Figures 2 and 3 and corresponding text of Mizokawa including transmission

output "c" as corresponding to the output signal of claim 16. The Office Action further contends that the intermediate level in the second operating mode occurs in Mizokawa during an operating mode that is defined by when the NRZ data "a" is a one and the SPM data "b" is don't care. (Office Action at page 2). A more careful reading of Mizokawa, however, demonstrates that there is a specific relationship between the NRZ data "a" and the SPM data "b". At Col. 3, lines 37-54, Mizokawa states:

> "In the NRZ transmission data a, the levels "1" and "0" indicate the longer and shorter pulse duration signals in the SPM data b respectively. When the amplitude level changing signal m takes the level "1", that is, when the longer pulse duration signal is transmitted, the transistor T is turned on so that a voltage derived by the division of the power source voltage V by the resistors R and RO is applied to the primary winding 5a of the transformer 5. On the other hand, when the signal m takes the level "0" (that is, when the shorter pulse signal is transmitted), the transistor T is turned off so that the power source voltage V is applied to the primary winding 5a of the transformer 5. Accordingly, the amplitude level of the transmission output c delivered from the transformer 5 is high corresponding to the shorter pulse duration signal and low corresponding to the longer pulse duration signal."

Mizokawa further states that the change in amplitude level in the transmission output "c" is to compensate for attenuation of the signal through the transmission path. Thus, shorter duration pulses are provided with larger amplitudes.

The office action states that "the output ['c'] of Mizokawa can transition from an intermediate value to a low value and from an intermediate value to a high value." Office Action, at page 3. The office then concludes, without the benefit of any specific teaching or suggestion in Mizokawa or other art of record that "Mizokawa would be fully capable of operating in the claimed manner." Office Action, at page 3. This conclusion is inconsistent with the teachings of Mizokawa. Mizokawa teaches that:

> "[t]he split-phase modulated data b has its voltage polarity inverted at every bit transition, as seen from FIG. 3. The voltage polarity is also inverted at the middle of each bit belonging one of "0" and "1" levels ("0" level in the shown example). Mizokawa at Col. 3, lines 3-10. As a result, the pulse duration of the data corresponding to the bit "1" is twice as large as that of the data corresponding to the bit "0"."

Since the SPM data is generated in this manner based on the NRZ data "a", the resulting transmission output "c" would not transition from a normally high or low level to an intermediate level and then to the other of the normally high and low level, as recited in claim

16. The amplitude of the output transmission "c" is dependent on a delayed version of the NRZ data "a" to provide the amplitude level changing signal "m", and the pulse width of the output transmission "c" is the same as the SPM data "b", which is to be transmitted.

A careful analysis of the structure disclosed in Mizokawa further demonstrates that, since the SPM data "b" is generated from the NRZ data "a", as discussed above, the circuitry utilized to generate the transmission output "c" is incapable of achieving the waveform recited in claim 16 when operating according to its intended purpose. Moreover, Mizokawa contains no teaching or suggestion that it would be desirable to provide a transmission output having intermediate level, having the waveform characteristic as recited in claim 16. It is respectfully submitted that the only basis for purporting that Mizokawa provides a teaching or suggestion from which one might provide an output signal that has the waveform characteristics and transitions as recited in claim 16 is improperly based on hindsight in which the present application is used as blue print to provide the missing teaching or suggestion. For the reasons stated above, reconsideration and allowance of claim 16 and claims 17 and 21 through 24, which depend from claim 16, are respectfully requested.

Claim 17 recites that the waveform controller further comprises at least one device that temporarily diode connects a device of the driver to enable the driver to provide the output clock signal at the intermediate level during the second operating mode. The office action contends that "the transistor T being a bipolar conducts main current only in a signal direction and thus meets the limitation of being a device that temporarily diode connects a device of the driver *i.e.* the winding 5A to enable the driver to provide the clock signal at the intermediate level during the second operating mode." Office Action at page 2. This issue was discussed with the Examiner during the telephone interview on January 27, 2006, and Applicant's representative strongly disagrees that one of ordinary skill in the art would consider that the transistor T temporarily diode connects the winding 5A, as suggested in the Office Action.

Significantly, when the transistor T is activated to conduct current, the transmission output "c" is not provided at an intermediate level, as is being suggested in the Office Action. Instead, the transmission output "c" has its higher amplitude level when the transistor T is activated by the amplitude level changing signal "m". As discussed above, the transistor T is turned on so that the voltage derived by the division of power by resistors is applied to the primary winding 5a of the transformer 5. Mizokawa, at Col. 3, lines 41-45. Accordingly, it

is when the transistor T is turned off that the transmission output "c" is provided at the level which the Office Action characterizes as corresponding to the intermediate level of claim 17.

Additionally, the operation of a transistor T based upon the amplitude level changing signal "m" from the delay block 22 (Fig. 3 of Mizokawa) does not temporarily diode connect a device of the driver to enable the driver to provide the output clock signal at the intermediate level during the second operating mode, as recited in claim 17. While applicant agrees that the Examiner is entitled to reasonable interpretation in interpreting the claims this interpretation must be done in view of the specification. It is well settled that skill in the art does not act as a bridge over gaps in substantive presentation of an obviousness case, but instead supplies an important guarantee of objectivity in the process. *Okajima v. Bourdeau,* 261 F.3d 1350, 59 U.S.P.Q.2D 1795 (Fed. Cir. 2001). To contend that the operation of the bipolar transistor T to provide voltage to a tap of a primary winding corresponds to temporarily diode connecting the winding is contrary the well defined concept of diode connecting. As one example, the specification of the present application describes a diode connection with respect to a PFET (p-channel field effect transistor) to drive the output clock signal at a corresponding intermediate level.

With regard to a bipolar junction transistor (BJT), which is the type of transistor T shown and described in Mizokawa, it is well understood that a diode connection for bipolar transistor occurs by shorting together the base and the collector of the BJT to provide a two terminal device. Submitted herewith as Exhibit A is a copy of page 505 from the Microelectronic Circuits, Second Edition, clearly describing a diode connected transistor. Applicant submits that from Mizokawa one of ordinary skill in the art would not interpret any diode connection by operation of the transistor T, especially when read in view of the present specification. Applicant submits that the contention that the operation of the transistor T in Mizokawa in any way temporarily diode connects the winding 5a is an attempt to bridge the gap over the substantive teachings of Mizokawa in an effort to compel a rejection.

For the reasons stated above, reconsideration and allowance of claim 17 are respectfully requested.

Claim 21 also depends from claim 16 and should be allowable for at least the same reasons as claim 16. Additionally, claim 17, in pertinent part, recites that a node of the voltage divider provides the output signal at an intermediate level during the second operating mode. The office action clearly interprets the secondary winding 5b as providing the output signal "c". As clearly shown and described with respect to Figs. 2 and 5 of

Mizokawa the power source voltage control circuit 24 includes resistor R and R0 that provide a voltage divider in which the junction point of resistor R and R0 is connected with a tap of the primary winding 5a of the transformer 5. Mizokawa, at Col. 3, lines 34-36. Moreover, when the transistor T is turned on, the voltage derived by the division of the power sourced by the resistors R and R0 is applied to the primary winding 5a of the transformer. The inductive coupling between the primary winding and the secondary winding 5b provides the corresponding transmission output "c". Significantly, the secondary winding 5b of Mizokawa does not include a node of the voltage divider that provides an output clock signal, as recited in claim 21. Additionally, similar to as discussed with respect to claim 17, when the transistor T is activated to cause the voltage divider of the voltage control circuit 24 to apply voltage to the primary winding 5a, the transmission output "c" is provided with an increased amplitude, not at an intermediate level. For these reasons, reconsideration and allowance of claim 21 is respectfully requested.

Claim 22 depends from claim 21 and is allowable for at least the same reasons as claim 21 and 16. Additionally, claim 22 recites that the circuitry of the waveform controller temporarily diode connects at least one device of the driver, which diode-connected device of the driver forms part of the voltage divider. As described above, Mizokawa fails to teach or suggest any diode-connected device of the driver which also forms part of the voltage divider, as recited in claim 22. Accordingly, reconsideration and allowance of claim 22 is respectfully requested.

III. Allowable Subject Matter

Applicants appreciate the indication that claims 2 – 11, 30 and 32 are allowable and that claims 14, 16, 18-20, 25 and 27 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

IV. Conclusion

In view of the foregoing remarks, Applicant respectfully submits that the present application is in condition for allowance. Applicant respectfully requests reconsideration of this application and that the application be passed to issue.

Should the Examiner have any questions concerning this paper, the Examiner is invited and encouraged to contact Applicant's undersigned attorney at (216) 621-2234, Ext. 106.

No additional fees should be due for this response. In the event any fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to Deposit Account No. 08-2025.

Respectfully submitted,

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